CLAIMS:

1. A programmer for a medical device, the programmer comprising:

a wireless telemetry circuit to communicate with the medical device;

a boost converter to convert a battery voltage to an operating voltage for the programmer; and

a control circuit to inhibit pulse skipping by the boost converter based on a level of the battery voltage.

2. The programmer of claim 1, wherein the boost converter activates pulse skipping when the operating voltage exceeds a threshold value.

3. The programmer of claim 1, wherein the boost converter is a fixed-frequency switching mode boost converter.

4. The programmer of claim 1, wherein the control circuit includes a transistor coupled to transmit the battery voltage to the boost converter when the transistor is ON, wherein the transistor turns OFF when the battery voltage exceeds a threshold voltage.

5. The programmer of claim 4, wherein the control circuit includes a comparator to compare the battery voltage to the threshold voltage, wherein an output of the comparator is coupled to a gate of the transistor to turn the transistor ON and OFF based on the comparison.

6. The programmer of claim 4, wherein the transistor includes a MOSFET, and the transistor transmits the battery voltage, less a body diode drop of the MOSFET, to the boost converter when the transistor is OFF.

7. The programmer of claim 4, wherein the transistor includes a MOSFET, and the transistor transmits the battery voltage, less a resistor voltage drop, to the boost converter when the transistor is OFF.

8. The programmer of claim 4, wherein the transistor includes a MOSFET, and the transistor transmits the battery voltage, less an external diode drop, to the boost converter when the transistor is OFF.

9. The programmer of claim 4, wherein the transistor includes a back-to-back MOSFET pair having a first MOSFET and a second MOSFET, and the transistor transmits the battery voltage less an external diode drop, to the boost converter when each of the first and second MOSFETs is OFF.

10. The programmer of claim 1, wherein the wireless telemetry circuit includes an antenna mounted internally within a housing associated with the programmer.

11. The programmer of claim 1, wherein the control circuit inhibits pulse skipping by the boost converter when the level of the battery voltage exceeds a threshold voltage.

12. The programmer of claim 11, wherein the threshold voltage is approximately 2.4 volts to 2.6 volts.

13. The programmer of claim 1, wherein the control circuit inhibits pulse skipping by the boost converter by limiting the level of the battery voltage applied to the boost converter.

14. The programmer of claim 1, further comprising a battery source to produce the battery voltage.

15. The programmer of claim 1, wherein the battery source includes two or more AAA battery cells, AA battery cells, C battery cells, or D battery cells.

16. The programmer of claim 1, wherein the programmer is a handheld neurostimulation programmer.

17. The programmer of claim 1, wherein the operating voltage is approximately 2.2 to 3.2 volts.

18. A method for controlling a power supply in a programmer for a medical device, the method comprising:

applying a battery voltage to a boost converter to convert the battery voltage to an operating voltage for the programmer; and

inhibiting pulse skipping by the boost converter based on a level of the battery voltage.

19. The method of claim 18, further comprising activating pulse skipping by the boost converter when the operating voltage exceeds a threshold value.

20. The method of claim 18, wherein the boost converter is a fixed-frequency switching mode boost converter.

21. The method of claim 18, further comprising transmitting the battery voltage to the boost converter via a transistor, and turning the transistor OFF when the battery voltage exceeds a threshold voltage.

22. The method of claim 21, further comprising comparing the battery voltage to the threshold voltage with a comparator, wherein an output of the comparator is coupled to a gate of the transistor to turn the transistor ON and OFF based on the comparison.

23. The method of claim 21, wherein the transistor is a MOSFET, and the transistor transmits the battery voltage less a body diode drop of the MOSFET to the boost converter when the transistor is OFF.

24. The programmer of claim 21, wherein the transistor includes a MOSFET, and the transistor transmits the battery voltage, less a resistor voltage drop, to the boost converter when the transistor is OFF.

25. The programmer of claim 21, wherein the transistor includes a MOSFET, and the transistor transmits the battery voltage, less an external diode drop, to the boost converter when the transistor is OFF.

26. The programmer of claim 21, wherein the transistor includes a back-to-back MOSFET pair having a first MOSFET and a second MOSFET, and the transistor transmits the battery voltage less an external diode drop, to the boost converter when each of the first and second MOSFETs is OFF.

27. The method of claim 21, wherein the programmer includes wireless telemetry circuitry with an antenna mounted internally within a housing associated with the programmer.

28. The method of claim 21, further comprising inhibiting pulse skipping by the boost converter when the level of the battery voltage exceeds a threshold voltage.

29. The method of claim 28, wherein the threshold voltage is approximately 2.4 volts to 2.6 volts.

30. The method of claim 21, further comprising inhibiting pulse skipping by the boost converter by limiting the level of the battery voltage applied to the boost converter.

31. The method of claim 21, further comprising supplying the battery voltage from a battery source.

32. The method of claim 31, wherein the battery source includes two or more AAA battery cells, AA battery cells, C battery cells, or D battery cells.

33. The method of claim 21, wherein the programmer is a handheld neurostimulation programmer.

34. The method of claim 21, wherein the operating voltage is approximately 2.2 to 3.2 volts.

35. A system for controlling a power supply in a programmer for a medical device, the system comprising:

means for applying a battery voltage to a boost converter to convert the battery voltage to an operating voltage for the programmer; and

means for inhibiting pulse skipping by the boost converter based on a level of the battery voltage.

36. The system of claim 35, further comprising means for activating pulse skipping by the boost converter when the operating voltage exceeds a threshold value.

37. The system of claim 35, wherein the boost converter is a fixed-frequency switching mode boost converter.

38. The system of claim 35, wherein the battery voltage is transmitted to the boost converter via a transistor, the system further comprising means for turning the transistor OFF when the battery voltage exceeds a threshold voltage.

39. The system of claim 38, wherein the transistor is a MOSFET, and the transistor transmits the battery voltage less a body diode drop of the MOSFET to the boost converter when the transistor is OFF.

40. The system of claim 38, wherein the transistor includes a MOSFET, and the transistor transmits the battery voltage, less a resistor voltage drop, to the boost converter when the transistor is OFF.

41. The system of claim 38, wherein the transistor includes a MOSFET, and the transistor transmits the battery voltage, less an external diode drop, to the boost converter when the transistor is OFF.

42. The system of claim 38, wherein the transistor includes a back-to-back MOSFET pair having a first MOSFET and a second MOSFET, and the transistor transmits the battery voltage less an external diode drop, to the boost converter when each of the first and second MOSFETs is OFF.

43. The system of claim 35, wherein the programmer includes wireless telemetry circuitry with an antenna mounted internally within a housing associated with the programmer.

44. The system of claim 35, further comprising means for inhibiting pulse skipping by the boost converter when the level of the battery voltage exceeds a threshold voltage.

45. The system of claim 35, wherein the threshold voltage is approximately 2.4 volts to 2.6 volts.

46. The system of claim 35, further comprising means for inhibiting pulse skipping by the boost converter by limiting the level of the battery voltage applied to the boost converter.

47. The system of claim 35, further comprising a battery source to supply the battery voltage.

48. The system of claim 47, wherein the battery source includes two or more AAA battery cells, AA battery cells, C battery cells, or D battery cells.

49. The system of claim 35, wherein the programmer is a handheld neurostimulation programmer.

50. The system of claim 35, wherein the operating voltage is approximately 2.2 to 3.2 volts.